

isc N-Channel MOSFET Transistor

AOI442

• FEATURES

- Drain Current $-I_D = 37A @ T_C = 25^\circ C$
- Drain Source Voltage-
: $V_{DS} = 60V(\text{Min})$
- Static Drain-Source On-Resistance
: $R_{DS(on)} = 20m\Omega (\text{Max})$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

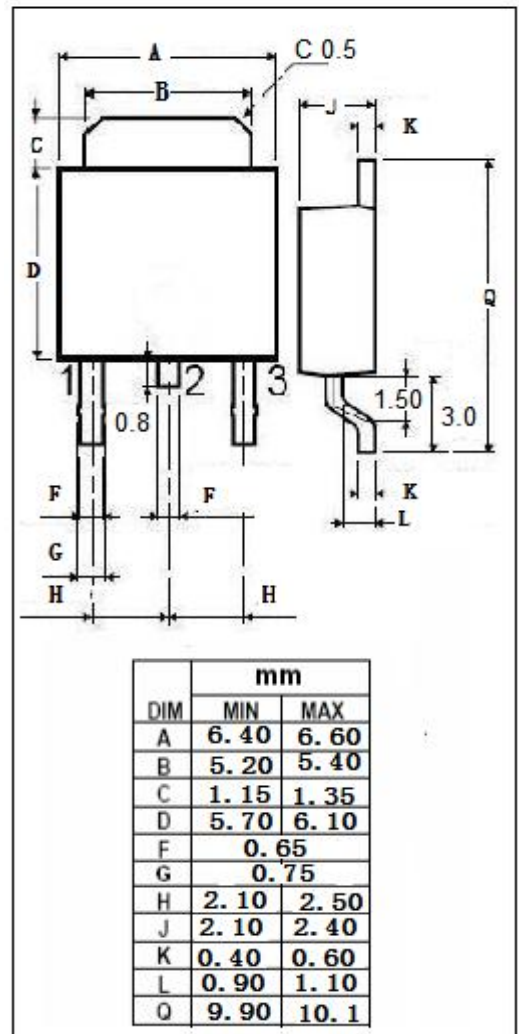
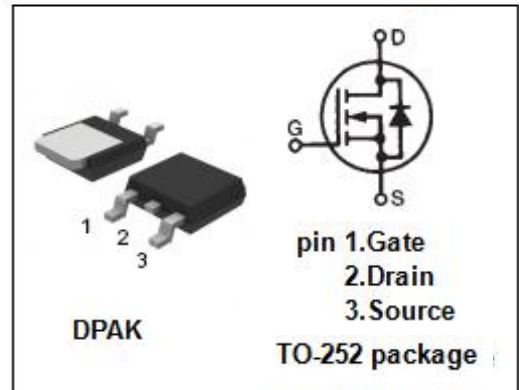
- Be suitable for synchronous rectification for server and general purpose applications

• ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ C$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|----------|------------|
| V_{DS} | Drain-Source Voltage | 60 | V |
| V_{GS} | Gate-Source Voltage | ± 20 | V |
| I_D | Drain Current-Continuous | 37 | A |
| I_{DM} | Drain Current-Single Pulsed | 60 | A |
| P_D | Total Dissipation @ $T_C = 25^\circ C$ | 60 | W |
| T_j | Max. Operating Junction Temperature | -55~175 | $^\circ C$ |
| T_{stg} | Storage Temperature | -55~175 | $^\circ C$ |

• THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|----------------|------------------------------------|-----|--------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance | 2.5 | $^\circ C/W$ |



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ELECTRICAL CHARACTERISTICS

 $T_c=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|--------------|--------------------------------|--|-----|-----------|-----------|
| BV_{DSS} | Drain-Source Breakdown Voltage | $V_{GS}=0V$; $I_D = 250\ \mu A$ | 60 | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}= 5V$; $I_D = 250\ \mu A$ | 1.6 | 2.7 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}= 10V$; $I_D= 20A$ $V_{GS}= 10V$; $I_D= 20A$; $T_J= 125^{\circ}\text{C}$ | | 20 37 | $m\Omega$ |
| I_{GSS} | Gate-Source Leakage Current | $V_{GS}= \pm 20V$; $V_{DS}= 0V$ | | ± 100 | nA |
| I_{DSS} | Drain-Source Leakage Current | $V_{DS}= 48V$; $V_{GS}= 0V$ $V_{DS}= 48V$; $V_{GS}= 0V$; $T_J= 55^{\circ}\text{C}$ | | 1 5 | μA |
| V_{SD} | Diode forward voltage | $I_S= 1A$; $V_{GS}= 0V$ | | 1 | V |

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